

### **REMARKS**

In the December 20, 2011 Office Action, claim 28 is objected to and claims 12, 16-19 and 21-29 stand rejected in view of prior art. Claims 12, 16-19 and 21-29 also are rejected as being indefinite. No other objections or rejections are made in the Office Action. Claims 1-11 and 30-34 are withdrawn from consideration.

#### ***Status of Claims and Amendments***

In response to the Office Action, Applicants have amended claims 12 and 28 as indicated above. Also, Applicants have added new claims 35 and 36 by the current Amendment. Thus, claims 1-12, 16-19 and 21-36 are pending, with claims 1, 12 and 30-33 being the independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of the above amendments and the following comments.

#### ***Claim Objections***

In paragraph 2 of the Office Action, claim 28 is objected to for informalities. Specifically, there is no antecedent basis for “said aircraft” in claim 28. In response, Applicants have amended claim 28 to depend from claim 26. Claim 26 provides the necessary antecedent basis. Thus, Applicants believe that claim 28 is now correct. Withdrawal of the objection is respectfully requested.

#### ***Claim Rejection - 35 U.S.C. §112***

In paragraph 3 of the Office Action, claims 12, 16-19 and 21-29 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In response, Applicants have amended claim 12 to clarify the claim language.

In the Office Action it is asserted that a start time does not have a duration. Accordingly, Applicants have amended claim 12 to clarify that the claim is reciting first and second time *periods*. Applicants believe that the claims now comply with 35 U.S.C. §112, second paragraph. Withdrawal of the rejection is respectfully requested.

***Rejections - 35 U.S.C. § 103***

In paragraph 6 of the Office Action, claims 12, 16, 17, 21, 25 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,006,985 (Ehret) in view of International Patent Publication No. 2004/075714 (Lustig). In paragraph 13, claims 18 and 19 are rejected as being unpatentable over Ehret in view of Lustig, and further in view of U.S. Patent No. 5,658,222 (Brown). In paragraph 16, claims 22 and 23 are rejected as being unpatentable over Ehret and Lustig and Brown in further view of U.S. Patent No. 4,600,723 (Short). In paragraph 19, claim 24 is rejected as being unpatentable over Ehret and Lustig in view of U.S. Patent No. 5,395,301 (Russek). In paragraph 21, claims 26, 27 and 29 are rejected as being unpatentable over Ehret and Lustig in view of U.S. Patent No. 6,164,787 (Seki). In response, Applicants have amended independent claim 12 to further distinguish the prior art of record.

More specifically, independent claim 12 now clearly recites that the block induces sleep of said subject *for a first time period /a second time period correspondingly to an eastward route/a westward route* of said moving schedule, respectively, *said first time period being shorter than said second time period*. Claim 12 also now recites that the block *reduces the body temperature* of said subject *to induce sleep* of said subject *for the eastward route*, and the block *reduces the sleep pressure* of said subject *to induce sleep* of said subject *for the westward route*. This amendment is supported by at least paragraphs [0081], [0093] and [0094] of the present application. The times at which sleep is induced are different from sleeping time. The step S20 induces sleep in the moving subject in a short time in order to shorten the sleeping time, and the step S30 reduces sleep pressure (by performing a relaxation event) in order to extend the sleeping time. It is self-evident phenomenon that the reduction of sleep pressure prolongs the sleep induction. In any case, clearly this arrangement of amended claim 12 is *not* disclosed or suggested by the combination of Ehret and Lustig.

Briefly stated, Ehret teaches a system which provides a print-out of *recommendations* for overcoming jetlag. These recommendations take the form of daily agendas with recommended eating, sleeping, and exercising schedules (see column 7). As can be understood by column 7 of Ehret, Ehret recommends certain behavior but *does not induce* this behavior. Moreover, Ehret discloses the need to provide different recommendations for overcoming jetlag depending on whether the flight is eastward or westward (see column 20).

With reference to Figure 22, westward flight steps 2240 and 2250 indicate that light is irradiated for apparently the entire time from breakfast to supper time. On the contrary, in the eastward flight, light is irradiated “until sleep onset” in step 2280. Figure 22 and column 20 disclose *nothing* about inducing sleep in the westward flight. Ehret merely refers to using zeitgebers to control sleep (column 1, lines 40-50), but does not discuss how to use them. Instead, Lustig is relied upon in the Office Action for providing sleep stimulation (page 13, lines 9-19). However, even if one were to use Lustig’s sleep stimulation teachings with Ehret’s sleep schedule recommendations, the combination of Ehret and Lustig would still fail to satisfy the limitations of independent claim 12, as amended, for at least the following reasons.

First, Ehret does not recommend inducing sleep *for a first time period /a second time period correspondingly to an eastward route/a westward route* of said moving schedule, respectively, *said first time period being shorter than said second time period*. In paragraph 27 of the Office Action, it is asserted that, depending on flight times and time zones, the times at which sleep would naturally be recommended by Ehret would be different in eastward and westward flights. As mentioned, Applicants have clarified the claim language by reciting that the claimed block induces sleep of said subject for a first time *period* /a second time *period* correspondingly to an eastward route/a westward route of said moving schedule, respectively, *said first time period being shorter than said second time period*. Ehret clearly fails to teach this limitation. Figure 22 and column 24 disclose varying the durations of the dim and bright lighting depending on whether the route is eastward or westward. Nevertheless, there is no disclosure of any sleep *duration*. This is particularly evident in the eastward route, which merely discloses providing dim light until sleep onset. Applicants note that the time at which sleep is induced is *not* the same as the time *period* for which sleep is induced. Ehret fails to disclose inducing sleep of said subject for a first time *period* /a second time *period* correspondingly to an eastward route/a westward route of said moving schedule, respectively, *said first time period being shorter than said second time period*, as now required by claim 12. As mentioned above, Lustig is merely relied upon for teaching devices for inducing sleep, and Lustig does not remedy the deficiencies of Ehret with respect to independent claim 12. None of the other references relied upon in the rejections remedy the deficiencies of the Ehret and Lustig.

Second, Ehret does not control sleep for eastward and westward routes as currently recited in claim 12. Claim 12 now requires that the block *reduce the body temperature* of said subject *to induce sleep* of said subject *for the eastward route*, and that the block *reduce the sleep pressure* of said subject *to induce sleep* of said subject *for the westward route*. Reference may be made to paragraphs [0081], [0093] and [0094] of the present application. Ehret does not disclose controlling temperature or pressure to induce sleep. In the Office Action, Lustig is relied upon for teaching a device raising a body temperature. On pages 10 and 11, Lustig does indeed teach, generally, providing devices to affect ambient temperature, thereby changing the body temperature to control a person's sleep behavior. However, Lustig is unrelated to air travel, and there is *no* indication in Lustig of how to control such a temperature device *based on the direction of travel* (eastward versus westward). Clearly, both Ehret and Lustig *fail* to disclose reducing the body temperature to induce sleep for the eastward route. Ehret or Lustig likewise *fail* to disclose reducing sleep pressure to induce sleep for the westward route. There is simply *no reason* given in the prior art for *reprogramming* Ehret's recommendation computer to control temperature and pressure as currently recited in claim 12. None of the other references relied upon in the rejections remedy the deficiencies of the Ehret and Lustig. Withdrawal of the rejections is respectfully requested.

Moreover, Applicants believe that dependent claims 16-29 are also allowable over the prior art of record in that they depend from independent claim 12, and therefore are allowable for the reasons stated above. Also, these dependent claims are further allowable because they include additional limitations.

Therefore, Applicants respectfully request that these rejections be withdrawn in view of the above comments and amendments.

#### *New Claims*

Applicants have added new claims 35 and 36 by the current Amendment. Claims 35 and 36 depend from independent claim 12 and are accordingly believed to be allowable in view of the above discussion. Moreover, claims 35 and 36 contain limitations undisclosed by the prior art currently applied against claim 12.

Appl. No. 10/593,260  
Amendment dated March 20, 2012  
Reply to Office Action of December 20, 2011

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In view of the foregoing amendment and comments, Applicants respectfully assert that the pending claims are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

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Dated: March 20, 2012

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